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Wanted a Social Security Plan for India

II

The people of India live as fishes do in the sea—the great ones eat up the little.—Sir Thomas Roe.

In our article last month we pointed out that if a social security plan is needed in countries like the United States of America, Britain and others in the West, which have made tremendous advances politically, socially, industrially, and economically, it is much more necessary in India which lies at the lowest rung of the ladder among the comity of nations, politically and economically in bondage, socially divided into various castes and creeds, which differences have recently been accentuated by self-seeking politicians who have raised the cry for Utopia to suit and serve their own ends, and industrially backward, thanks to the stepmotherly attitude shown by the powers that be.

The problem of India is mainly a problem of villages and villagers. May be, a good number of people have migrated to towns to eke their livelihood, due to the development of some industries, notably textile, on a small but intensive scale, in spite of serious obstacles placed in their way. But the large bulk of the people still live in the seven hundred thousand villages scattered all over the country, dependent entirely upon the staple industry of the country, agriculture, which cannot, even according to census officials and others, bear such a heavy burden. The yield of lands has fallen considerably below the average, the fertility of the soil having dried up. To add to this, the oppressive land tax, levied according to the much-discredited half-net theory, prevalent in ryotwari areas, leaves little to the ryot, many of whom are poor and humble *pattadars*, paying less than ten rupees per annum as kist.

Dominated by *kismet*, provided he was left in possession of the land to which he was much devoted and attached, he cared little that another should reap the fruit of his toil, that petty officials had to be placated,

that his village was insanitary, that he had neither hospital nor school, and that his roads were deeply rutted tracks often impassable after rain, or, if he cared,he was absolutely powerless to remedy it. But the great winds that had blown across the world since the first world war, laden with the pollen of new, strange and modern ideas, had passed, ever so lightly, along its narrow twisting lanes; and in the evening, after a day's hard toil and moil in the cultivation season, or after spending the whole day in idleness in the off season —it has to be remembered that agriculture is only a seasonal industry and the ryots have very little to do during the major portion of the year—when they gathered at the village *chavady* or under the canopy of the sacred *Arasa* tree on the tank bund, to exchange gossip, the talk was no longer entirely of crops, cases and neighbours. Since many of them had tasted the comforts of a higher standard of living, their wants had multiplied. The village was, in fact, pulsating with a new life and a new spirit, which manifested themselves in many different and divergent ways, much of them to the chagrin of the administrator, but all inspired by an underlying desire for better conditions of life.

We have the unfortunate spectacle of another world-war—a real world-war in the strict sense of the term with wide ramifications all over the globe—within a generation. Many Indians have again joined the fighting forces and are distinguishing themselves in various theatres of war in all the three forces, much enthused and, no doubt, enamoured by the rosy prospect of achieving the four freedoms which President Roosevelt has vouchsafed to the whole world as a result of this war. May be, excepting those whose names find a place in the Honour's list, the rest will return to the country only after the termination of hostilities. But the new ideas and the newer and envigorating spirit that have captured their imagination, have travelled far in advance and permeated to every nook and corner in this country, that unless something is done, and that too immediately, to improve the position, to raise the standard of living of the four hundred millions inhabiting this ancient and once glorious land and make them realise that God-given life is worth living, they will be sorely disappointed and think that all their labours are lost.

Politics and the question of freedom for the country are beyond the range and scope of this Journal, though the latter has something indirectly to do with the health of the nation. But freedom from want and freedom from fear are closely interlinked with the problem of health in all its aspects that we cannot ignore them. The late Dadhabhai Naoroji, that grand old man of India and the veteran of thousands of battles for the uplift of his country, had estimated in one of his able and analytical surveys, the average income of the people of one of the provinces, we mean the Punjab, to be Rs. 20/- per annum and the cost of the absolute necessaries of life of an agricultural labourer Rs. 34 per annum. It might have been a puzzle to Mr. F. C. Danvers of the India Office in those days how with only an income of Rs. 20/- he can provide for an expenditure of Rs. 34. But those who had actually studied the condition of the agriculturist firsthand and noted the rake's progress would not have been really puzzled at this extraordinary state of things. Surveys have been made in other provinces as well later, but no average income figure which we can deem reliable and trustworthy had exceeded Rs. 28. Of course the official estimate varied widely as it is but natural. The basic figure then arrived at by non-officials might have gone up with the march of time and with the increase in the

prices of commodities. But it has not touched the average income figure of any other country in this world and cannot be touched, things being what they are. The increase in the prices of commodities is a double-edged weapon and it has increased the cost of the absolute necessaries of life also, so much so that we find the majority of the people always and ever on the minus side. Unless the economic position of the people is considerably improved, and that too beyond recognition, the absence of freedom from want will be a sore pest eating the vitals of the nation. This is where the health of the nation directly comes in.

How can people be strong and healthy enough to resist diseases which are ravaging the country from one end to the other, day in and day out, unless the standard of their living is raised and every one is provided with the means for his existence? The expansion of industries is one way of providing a large number of people with employment and diverting them from the hard-pressed land. The development of agriculture by scientific means and providing the agriculturist with the wherewithal for it, is the surest road to increased production.

We have too long been dependent upon other countries, notwithstanding the recommendations of the Agricultural Commission presided over by the present Viceroy, even for our barest necessaries of life, we mean foodstuffs, and the very first brake to it has left us absolutely helpless. Only the other day we heard one of the Parliamentary Secretaries to the Government of Orissa unfolding the most unhappy and heart-rending tale of a number of deaths in the province, due to starvation. Trained and tutored, though for a short period, in the bureaucratic school he, of course, qualified the statement by the explanation that most of them were infirm and unable to bear the pangs of starvation. Why should such a condition be allowed to exist? Is it not the duty, the most elementary function, of the Government to look after the health and welfare of the people? Have not civilised Governments in the world undertaken the responsibility of, and made provision for, keeping the people free from absolute want? If such a regeneration is to be brought about, the whole basic structure of our society has to be recast and remodelled, the possibility of great ones eating the little, as fishes do in the sea, so picturesquely described by Sir Thomas Roe, has to be put a stop to. The keeping of the health of the nation trim must be the foundation on which that edifice should be raised. The formulation and adoption of such a plan will be in conformity with the adage, "prevention is better than cure." Minimum wage regionally to suit local conditions will have to be fixed; peace in industry will have to be assured; old age pensions and sickness insurance schemes will have to be introduced; more hospitals will have to be opened; health staff will have to be increased; means of communication will have to be improved; free and compulsory elementary education to every boy and girl of school-going age will have to be provided for; allowances for the proper maintenance and upbringing of children, who are to be the future citizens of the land, will have to be provided for; thousand many other things, not excluding amenities, will have to be arranged.

A broad-based and comprehensive social security plan, providing for these and other subsidiary things, can alone solve the many serious problems facing the country and save the people from the many ills from which they are at present suffering. This is the need of the hour. The Government owe it to themselves and to the people of this country to bestir themselves and take active and effective steps in this direction. Will they wake up before it is too late?

Hygiene, Public Health and Social Welfare in India

IN THE MAURYAN ERA

(4th Century B. C.)

D. V. S. REDDY, *Andhra Medical College, Vizagapatam.*

(Continued from page 138, July '43.)

General sanitation and early attempts to enforce a Public Health Act.—*Water supplies etc.:* A water reservoir was located east by north of palace. The buildings in the fort were provided with wells. As far as the public and the poor were concerned, a well was to be dug for every 10 houses. In addition, the king "shall construct reservoirs filled with water from perennial sources or from other sources." Or, he may provide with sites, timber etc., those people who construct reservoirs. (*Bk. II Ch. 1*). Protection for water supply systems was also provided. "Whoever excretes fæces in places of pilgrimage, reservoirs of water, temples, and royal buildings shall be punished with fines rising from one *pana* and upwards in the order of offences; but when such excretions are due to the use of medicines or disease, no punishment shall be imposed." (*Bk. II Ch. 36*). One illuminating sidelight is thrown by a casual remark in connection with winning over the factions in the State. "Just as a reservoir of water belonging to *chandalas* is serviceable only to *chandalas* but not others," (*Bk. I Ch. 14*) indicates separate wells for different castes.

Drains:—From each house, a water course of sufficient slope and length was to be constructed, so that water either flowed in a continuous line or fell from it into the drain. Violation of this rule was also punishable with fine. (*Bk. III Ch. 8.*)

Scavenging:—The existence of scavengers for sweeping the city is also indicated. (*Bk. IV Ch. 1*). Under the general title of artisans, the book mentions scavengers, medical practitioners and musicians.

Prevention of nuisance:—Strict rules were laid down to prevent ignorant or careless people, causing harm or ill-health to the citizens. "If a pit or water-course, ladder, or dunghill or any other part of a house, offers or causes annoyance to outsiders, or in any other way obstructs the enjoyment of others, or causes water to collect and thereby injures the wall of a neighbouring house, the owner shall be punished with a fine of 12 *panas*. If the annoyance is due to fæces and urine, the fine shall be double. The water course (gutter) shall offer free passage for water. Otherwise the fine shall be 12 *panas*." (*Bk. IV Ch. 8*). In another part of the book, while dealing with the duties of the city superintendent, the following rules are laid down: "Whoever throws dirt in the street shall be punished with a fine of 1/8 *pana*; whoever causes mire or water to collect in the street, shall be fined ¼ *pana*; whoever commits the above offences in the King's Road, shall be punished with double the above fines." The duties of the city superintendent included inspection of water reservoirs and of roads and of hidden passages out of the city. He was fulfilling the role of the Municipal Health Officer. (*Bk. II Ch. 36.*)

Social Welfare—*Sick room and labour room in the Harem*: "On one side in the rear of the harem, there shall be made for the residence of women compartments provided not only with all kinds of medicines, useful in midwifery and diseases, but also

with well-known potherbs and water reservoirs." (*Bk. I Ch. 20*). While the royal harem contained a special apartment for labour, ordinary householders were permitted to put up temporary structure for the confinement of women for 10 days.

(*Bk. II. Ch. 8.*)

Facilities and aid during confinement of pregnant women:—Commodities (like medicines etc.) intended for the confinement of women were let off, free of tolls. (*Bk. II Ch. 21*). Women were permitted to go to the house of kinsmen under the following circumstances: "death, disease, calamities, confinement of women." "Whoever prevented her going out, under such circumstances, shall be fined 12 *panas*. If the women conceals herself she shall forfeit her endowment." (*Bk. III Ch. 4*). The State had to provide subsistence for helpless women when they were pregnant and also to the infants and children they give birth to. (*Bk. II Ch. 2*). Women that were pregnant were given free passes to cross rivers in boats. Those persons who go out at night in order to attend to the work of midwifery were not to be arrested for moving about at night. (*Bk. II Ch. 36*). Allusions occur to midwives.

Orphanages:—Men or women neglecting to maintain children were punished.

The State had to give accommodation and food to the orphans. These were put to the study of sciences and trained as spies. (*Bk. II Ch. 12*).

Infirmaries.—*Poor-houses and provision of work and wages*:—The State also maintained the aged, the infirm, the afflicted and the helpless. Widows, cripples, women, girls, old women, servants of the king, mothers of prostitutes and old prostitutes were employed to cut wool, fibres, hemp, etc. Those women who do not stir out of their houses, those whose husbands are gone abroad, cripples and girls, were provided with work (spinning) in due courtesy, through the medium of maid servants. (*Bk. II Ch. 23*). Those who did greater work were presented with oil and dried cakes of myrobalam fruit.

Control of prostitution:—The conception of an appointment called the Superintendent of Prostitutes is itself an outstanding achievement of the ancient Indian civilisation. His duties were multifarious:—registration, determination of earnings, adjudicating cases, etc. (*Bk. II Ch. 27*). "A public woman shall surrender her person as agreed upon: but insistence on the observance of any agreement which is illconsidered and improper shall not be successful." (*Bk. III Ch. 13*). Every prostitute had to pay every month twice the amount of a day's earning to the Government. The State maintained all those that teach the prostitutes, arts such as singing, playing on the musical instruments, dancing, acting, painting, manufacture of scents and garlands, shampooing and the art of attracting and captivating the minds of others. (*Bk. II Ch. 27*). Many interesting rules for the protection of the prostitutes against rape and abduction were in force. (*Bk. II Ch. 27*). One almost modern notion may be quoted: "When in her own house, a prostitute deprives her paramour of his enjoyment, she shall be fined 8 times the fees she charges, unless the paramour happens to be unassociable, on account of disease and personal defects." (*Bk. II Ch. 27*).

Nurses:—References occur to nurses in the section on rules regarding "Slaves and Labourers." (*Bk. III Ch. 13*). In another context, further light is thrown on the manner in which the ranks of these were recruited. "She (a prostitute) who has lost her beauty shall be appointed as a nurse (*Matrika*)." (*Bk. II Ch. 27*).

Protection and health of workers:—If a healthy labourer deserted his company after work has been begun, he

shall be fined 12 panas. (*Bk. III Ch. 14*). Employing a slave to carry the dead or sweep ordure, urine or the leavings of food, keeping a slave naked, or hurting or abusing him, or violating the chastity of a female slave, shall cause the forfeiture of the value paid for him or her. (*Bk. III Ch. 13*). Labourers suffering from diseases should be shown some concessions or be allowed to get work by a substitute. (*Bk. III Ch. 14*).

Child labour discouraged:—If a slave who is less than 8 years old and who has no relative is employed in mean avocations against his will, the master shall be punished with first amercement. (*Bk. III Ch. 13*).

Maternity benefits for female slaves and labourers:—Anyone attempting to cause abortion to a slave by medicine was punished. (*Bk. III Ch. 20*). If a pregnant female slave is pledged or sold without any provision for her confinement, the master shall be punished. (*Bk. III Ch. 13*). When a child is begotten on a female slave by her master, both the child and its mother shall at once be regarded as free. (*Bk. III Ch. 13*).

(*To be continued.*)

PYRETHRUM AND ITS USES

Dr. T. R. RANGASWAMI, M.B., B.S., B.Sc.,
District Health Officer, Anantapur.

THE Pyrethrum plant is a native of Czechoslavakia and years ago it was the only source of supply to the world. Latterly, Japan took it up and till recently she was supplying the major portion of the world's requirements In recent years, Kenya, Kashmir and the Nilgiris have taken to its cultivation. The plant belongs to the Chrysanthemum family and the flowers contain the active insecticidal principle called Pyrethrin. The leaves of the plant do not possess this property and when growing the plant, they are themselves liable to attacks from insects, and have to be dealt with by standard methods of insect control on growing plants. It can be propagated either by seeds or suckers. The seeds look like *jeelakara*, and should be sown in prepared beds and they germinate in two or three weeks and are fit for transplanting in about four months. They should be planted in rows 18" apart in a well prepared field Subsequent weeding is needed and watering is done in dry weather, if necessary.

The plant begins to flower in about 1½ years from the time of sowing and are gathered every week The flowers are dried and placed in the market. They have to be stored in airtight drums to prevent loss of pyrethrin due to volatalisation.

Dried pyrethrin flowers are available in the market. Yield of flowers vary from place to place and so far as Indian conditions are concerned while we are producing flowers with as high a pyrethrin content as the imported produce, the pounds per acre has not come up to the level of other countries and so experiments are in progress to find out the condition of soil, temperature, rainfall, humidity and altitude which is the optimum for the maximum yield of pyrethrin per acre with minimum of overhead and recurring charges. Plants grown at an altitude of 6,000 feet and above give a higher content of pyrethrin than plants grown in lower elevation.

After the fifth year the percentage of insecticidal principles falls and the field has to be ploughed up and fresh planting commenced.

Kashmir State in her anxiety to keep up her reputation has maintained it as a State monopoly till she gets sufficient data and it is now being grown there as forest produce. In the Nilgiris, it is being grown by private parties and Rao Bahadur M. S Raghavan, Provincial Sylviculturist of the Madras Forest Department, is also conducting experiments to grow it as an early subsidiary catch crop. The flowers are a general insecticide. It is non-poisonous to mammals. Therein lies its safety, but the bitter taste of the flowers and its being a solid are limiting factors for its utility. The effective element is intra-cellular and varies from 0.5 to 1 7%. There is a biological test which till recent years was the only test. A standard solution was prepared and its effect was tested on either mosquitoes or flies and the results were expressed as percentage kill per unit of material This method is still used as a routine by the Mysore State Public Health Department for standardisation of the extract issued for anti-malarial use.

Chemical Methods.—There are at present chemical methods for the quantitative estimation of pyrethrin. This is better as it can be exact and does not depend on the variable factor of living insects having variations due to resistance, seasonal condition and other factors difficult to assess or control.

Dr. R. Adiseshan, Director of Public

Health, Madras, is greatly interested in this and at his instance this test is being done at the Kerala Soap Institute, where factory methods of preparing the extract are being investigated.

Uses and demonstration of different methods of application.—It kills flies, fleas, cockroaches, silver-fish, bed-bugs, and mosquitoes. It is used on a large scale for anti-malarial work in Pattukottai or Mettur Project Area in the Tanjore district, and for anti-mosquito control. I have used it against flies and plague fleas and found it very effective. Its effect on silver-fish and crickets which destroy silks, wool, leather goods and books. makes it very useful in the house. The destruction of bed-bugs will add to our comfort It is non-poisonous to human beings, dogs, cats and other domestic pets. It effectively defleas a dog.

Different methods of application in practice—Solid condition—The dried flowers kept in old linen bags (which readily allow the pyrethrin to volatalise) kept between woollen clothing, and leather goods prevent *devastation by silver-fish, crickets, and cockroaches.* In the library, it prevents destruction of books by insects.

Liquid extract in kerosene oil in suitable proportion is very effective when applied with a sprayer or atomiser for destruction of flies, mosquitoes, fleas, silver-fish, plantlice and caterpillars The great advantage is that the *plant is not killed. A rose bud or sweet pea* bud attacked by insects when sprayed, flowers normally which but for spraying would either have been sucked dry by plantlice or eaten by caterpillars. Dry powder kills grass-hoppers, and whether the liquid extract spray can be used effectively against locusts will be an interesting and useful subject for investigation.

Fumes.—I have found it only of psychological use. It creates an impression of activity though it is not lethal to insects when applied as fumes.

I mention this as anti-mosquito coils popularised by Japan have a ready market. They are worse than useless as a false sense of security has been created by advertisements *which mislead the public.*

OBESITY *and* FAT-RID AND SLIMMING PROCESS

DR D. AMBROSE, L.M.P., Vedasandur.

Obesity ?—Insidious abnormal accumulation of adipose tissue (fat) throughout the body more noticeable in the regions of the abdomen, rump and chest.

A fat-ridden man is a useless blubbery hulk, a lump of iniquity and an object of curiosity whose locomotion is woefully arrested. He is accident-prone and perforce takes to vehicles. Obesity is a prerogative of the rich who live in the lap of luxury. There are several kinds of obesity of which the avoidable, *pitiable and the comic* are the commonest.

An assortment of rotundities are a funny familiar sight, attracting public gaze and prying eyes. One should dread obesity as he would the devil and dispel any proclivity to or vestige of *propensity towards it* Its utter uselessness and concomitant discomforts and dangers can better be imagined than described.

Causes.—The causes of obesity are legion They are as varied as they are insidious. *Most outstanding among them are* :—

Heredity. over-eating, under-doing, imbibing over much of alcohol, Adam's ale, sugary stuff, fat. lethargy, occupational or habitual, or a combination of the above invite obesity with impunity.

Principles underlying treatment.—Some of the fundamental principles underlying the treatment are :—

One must be underfed to the extent that one is forced to consume one's own fat. Habits of eating that lead to obesity have got to be reversed, and more sane ones substituted Alcoholic excesses and sleeping during the day, unless compelled by force of circumstances, should be avoided. A short restful sleep (nap) after 40 years is permissible, if necessary, not bordering into deep sleep. Inflexible determination coupled with iron will to slim is a pre-requisite.

Treatment — *Shibboleth* : — *Prevention is* easier than correction.

Exercise —No age is exempt. The importance of exercise to exorcise adiposity cannot be over-stressed. Graduated exercise consistent with the requirements of each individual is calculated to promote fat-combustion. Active habits in combination with exercise tend to make the body supple and flexible. Brisk erect walking with deep breathing in dry, dust-free open atmosphere. Drawing the abdomen well in while expanding the *chest is an effective tummy* reducing exercise. This, if supplemented by massage of the abdomen towards the chest, would be immensely helpful.

Bringing the legs to the chest and tightening (knee chest position).

Lying on the back and raising both legs and then raising the upper part of the body

Muller's Abdominal Exercise would be immensely useful and can be had of Higginbothams'. Running, bar-exercises, water-drawing, wood-splitting, ring-tennis and other similar exercises tend to reduce over-heavy waists, ungainly snags and odd-looking paunches.

Diet:—Comes a close second in the treatment of obesity. Waive ruthlessly such articles from the dietary as conduce to the deposition of fat. A suitable well-represented diet is of supreme importance. Eat always a little less than you can actually imbibe, less of sugar and fat and fruits *ad-nauseum.*

Fruit fast:—Is a priceless novel adjunct in the treatment of obesity. This means the patient should live on oranges and oranges alone I may add tomatoes in combination with oranges may be advantageous. Should the patient feel weak and unstrung during fruit-fast he may take some ovaltine, soda or milk just enough to revive him.

Depletion:—Occasional purges preferably saline in Kruschen's Eno's Sedleitz etc., may be greatly helpful. Oily purgatives are taboo. Turkish bath, steam bath or any extemporised mode of elimination of bad humor would step up elimination. This is usually taken fortnightly or once in ten days or oftener as the sufferer feels necessary. Where drugging is necessary *pari passu* it may be had recourse to in cases of thyroid deficiency, diabetes etc. Redusa tablets with its diet chart will be useful in most cases.

Mechanical pressure:—May be exerted to the benefit of the sufferer. More often than not it is best effected by brisk massage during oil bath. This has a dual advantage of facilitating friction and fat-melting.

Massage vibrations or fat compression and melting mechanism:—For ridding the plethora of stagnant fat in certain localised regions of the body by an apparatus by mechanical pressure called stimulators. The technique is simple and unattended with pain. This unhappily is only within easy reach of rich and could be had of: Magnet House, B. P. No. 35, Mount Road, Madras.

Honey is Health-Food:

BUT PURE HONEY ONLY

N. P. MULLICK,

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P.O., Raison, Kulu, The Himalayas.

DURING the last several years the writer has travelled over to almost all big cities of India—say Bombay, Calcutta, Delhi, etc., in connection with his bees and honey. He had the pleasure to meet and discuss the subject with a large number of highly educated and high class people. He found that hardly one per cent. of even such enlightened persons know what honey is. So far the general idea is that a sweet substance gathered from a honey-comb and without the amalgamation of factory sugar is pure honey. But originally this was not the case. Even that honey which is collected by the honey-bee and is gathered from the honey-comb is not pure if it is gathered by the cruel, crude, old method by killing or removing the bees by means of flames of fire or very strong smoke, cutting the comb, crushing and squeezing it and then straining through a cloth, and if this honey is too dense to pass through the cloth, making it thin by putting it on fire. Apparently that might be pure-honey in the sense that it is collected by the honey-bee and gathered from the honey-comb but qualitatively *it is not pure honey.*

The writer of these few lines would try to explain what pure honey is and how it is a health-food.

The honey-bee for her use brings to the hive from the fields five sorts of stores: nectar (which is afterwards turned to honey), pollen (of flowers), water, salt, and propolis (a sort of gum). All these stores are kept in the various cells of the comb, which is built of wax, having been secreted from the body of the bee. In the same comb the Queen-Bee lays eggs, which when developed to larva and pupa stages, are called brood or capped-children-in-cells. All these—the stores and the brood—are, of course, kept at different specified places but they are all in the same comb. When the comb is flamed or smoked densely, many of the bees are killed in the comb because, at that time, they are busy in eating honey as it is their habit to eat as much as they can at the time of danger. Then the comb is cut, crushed, squeezed and strained. In this way the bee-killing, brood-crushing, wax, propolis, pollen, and all other dirts are also strained along with honey. There is a good deal of amalgamation of these dirts and dead matter in this honey. Honey being very sweet and the brood etc, being tasteless and smell-less, these are over-powered by the highly sweet honey. When honey is heated by direct fire, the properties of honey are evaporated. It is now clear that by the cruel, crude, old method, not only does honey contain all the dirt-amalgamation but it is devoid of all properties of genuine honey. It is why this honey is not at all pure.

There is one other point also. When taken from the flowers by bees, nectar (honey) contains 60 to 80 per cent. water, some times even 90%. By the bees' labour most of this water

is dried off and when about 18% (17.75%) water is left which is the right and original quantity, the bees cap the honey cells with a thin layer of wax. This is *ripened* honey and would not ferment at all as it contains right quantity of water; but honey of those cells which though full of honey are not thus capped contain *raw* honey which, if gathered, would ferment after some time as it contains excess quantity of water. Fermentation here means that honey would give bad taste, bad smell and bad colour. By the crude method of gathering honey no regard is paid as to whether the honey in the comb is raw or ripe. It is taken out under the impression that it is honey. The result is "fermentation" sooner or later. Such honey is not pure at all.

The apiaries run on modern scientific methods do take care of all these wrongs. By the knowledge and practice of Bee-Keeping, the expert Apiculturist would not kill a single bee, would extract only honey-combs as the arrangement of his modern hives is such as to make the honey-combs separate from those of brood-combs, would not destroy or injure the combs by extracting honey from out of them by means of a machine working on centrifugal system of rotation called the Honey Extractor, and would extract only those combs which are capped with a thin layer of wax by the bees. This honey is the best and pure honey and a health-food.

The following analysis of honey is a clear proof in support of the claim that honey is health-food:—

Honey belongs to the Carbohydrate food variety. It is practically a solution of dextrose and levulose in nearly equal proportion in water with sucrose in varying small quantities naturally flavoured and containing aromas imported to it by the flower and the bee. Hassal in the "Food-Its Adulteration and the Method for their Detection" reports honey to be composed of saccharine glucose, mineral matter and moisture.

Honey is physiological sugar and not a counterfeit. Through the prodigious genius of nature through a wonderful cycle, the energy of the Sun is preserved in the nectar and is liberated when honey is eaten.

The Average Chemical Composition of Honey; The Principal Components are:—

Water	...	17.75%
Levulose	...	40.50%
Dextrose	...	34.02%
Sucrose	...	01.90%
Dextrine and Gums		
Ash (Silica, Iron, Copper, Manganese, Chlorine, Calcium. Potassium. Phosphorus, Sulphur, Aluminium, and Magnesium	...	0.18%

Alim Caillas, a well known French Honey Chemist, in his recent excellent book, points out: "Honey contains calcium phosphate in such a form as to be most easily absorbed whereas apparently identical compounds prepared artificially are not thus easily absorbed."

There are also traces of not only gums but of oils and essences natural to the flowers. All these qualities of flowers are transmitted to the human body, when honey is consumed.

The specific gravity of honey is about 1.45 and the number of calories per pound are 1,450.

LIKELY SUBSTITUTES FOR COFFEE AND TEA

R. V. Lakshmi Ratan Senior, Mylapore

SIR R. N. Chopra, has, on page 68 of his book '*The Medical and Economic Aspects of some Indian Medicinal Plants*' (Patna University Publication, 1932) stated that the number of plants used as substitutes for genuine tea in different parts of the world is very large and nearly 200 are known. From the *Commerical Products of India* by Sir George Watt, *Tropical Planting and Gardening* by H. F. Macmillan and some other publications, it is considered that the following products would serve as substitutes for coffee and tea:

(1) Seeds of *Cassia Fistula* (Amaltas), (2) Seeds of *Cassia Occidentalis* (Kasunda), (3) Seeds of *Cassia Tora*(Chakunda), (4) Dried leaves of *Cassia Auriculata* (Matara Tea), (5) Leaves of *Eupatorium Ayapana* (Ayapana Tea), (6) Seeds of *Phoenix Sylestris* (wild date), (7) Seeds of *Hibiscus Abelmoschus* (Kala Kasturi). (8) Seeds of *Spermacosac Hispada* (Madanaghanti), (9) Fenugreek, and (10) Groundnut. The names given within brackets are Hindi equivalents.

I made coffee from the roasted and ground seeds of wild date (*Phœnix Sylyestris*). This wild date coffee was relished by about 50 per cent. of the people to whom I distributed. One-half of real coffee powder, if mixed with equal quantity of wild date powder, will make it more palatable to those who are habitual coffee drinkers.

These might, after investigation, prove to be better and cheaper substitutes for coffee and tea Scientific investigation of the above products seems to be worthwhile, with a view to ascertain their adaptability and healthfulness and palatability as substitutes for coffee and tea Needless to say any cheaper and better substitute for coffee and tea is more than welcome in these days of economic hardship. Another point favouring the investigation of the above products is that a good many of them are found in wild state and within easy reach of people in different parts of India I shall therefore thank you if the valuable columns of your journal are employed to evoke public interest and to draw the attention of the nutrition research scientists to these and other likely substitutes.

LIFE AND YOU IN YOU

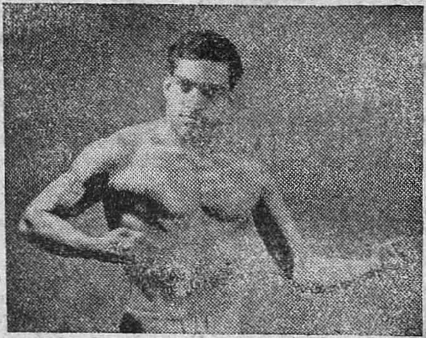
BHUPAL C. MOHIRE, B.A.,
Belgaum.

LIFE is existence. This existence is bounded by a future eternity toward which all of us move, and the unknown from whence we come. The eternal mystery lies to both sides. Between these two lines—the eternity of the future and the one of the past—are the few brief years which we claim as our own. Into this short span we must crowd our hopes, love, ambition, achievement and make our life worth. "Power, wealth, wisdom and understanding are not the gifts of life, for life has only two things to you or any man or woman. The first is *consciousness*, the faculty of knowing that you are *you* and the second is the 'Mighty Laws and Resources of Nature' says a scholar, and asserts that these two can make all the others possible. The two which form the great instruments make all, to hold the key to the treasures of happiness and affluence.

As for consciousness, every human has it, but most of them dissipate it in self-pity, false praise and idle wishes that a fortunate combination of circumstances will suddenly bring them ease, freedom from strife, and the power of wisdom which they seek for and see in others. Also, all humanity has the equal right to direct the forces and hidden powers of nature, but most of it lacks the patience and initiative to take time from the fleeting pleasures of the day, to seek in these mysteries the lasting contentment and abundance which they conceal.

Opportunities *are made*, not found. The fisherman who made a successful haul did so because he put himself for a probable eventuality. No physician found in his profession by excluding himself from humanity and its ailments. Life can be successive steps toward the highest ideals you can imagine, each one in beautiful experience and the fullness of living, or at its worst it can be a hideous memory, with false starts and disillusionment. Remember life owes you nothing; you are indebted to it for the opportunity it has given you.

Millions of humans are like the simple blades of grass. Humanity springs up in every corner of the earth, and in every extreme of environment. Men struggle with existence in the blistering sun of the tropics, the paralyzing cold of the arctics, in dark, murley swamp-lands on the top of mountains and on the rolling plains, or in flowing rivers or in sweeping waters. But it is to be grieved over that most of them permit themselves to be acted upon by their environment, and they consequently bear its mark. It not only affects their physique and the colour and texture of their skin, eyes and hair, but even their thinking and mode of living. As the eminent writer, John Hodgdon Bradlay said; "The fabric of human life has been woven on earthly looms."



Health—The Secret of Happiness.

Bhupal Chandra Mohire, B.A.,
The Founder of Jaya Dhayal
Vyayam Mandal, Belgaum.

You have often heard of the inner radiations of self, the slumbering being within, the subconscious mind, the potential perforce and a host of other terms implying and declaring that man possesses an inner intelligence that is capable if he but knows how to direct it. Likewise, he will discover in due time that his success and happiness in life depend upon the finding of the right place, the right groove and the right career. Regardless of our complex talents and abilities, each individual has special aptitudes, special qualifications, special abilities, and special powers which fit him to fill some unique position in life wherein he will attain success with greater rapidity, find happiness with less effort and find contentment throughout life.

Ninety per cent. of the human beings in the world are occupying mediocre, common place positions in life, and a large majority of these are far below the classification of being happy and contented. We have had the stone age, the iron age and the golden age. Now we are entering the mental age; the things that some people are already able to accomplish by mental processes seem like miracles to those who do not yet understand the wisdom and power of the subconscious mind. Whilst it is found that though Galileo was stoned, Columbus was imprisoned, Marconi was

laughed at, or even more than that, Christ was crucified, still they continued their ideals and pure notions and it is because of their *feeling, knowing and directing of their* subconsciousness. So the people who discovered their real places in life, who are busy at their real missions, and who, as real masters of their careers, are controlling their destinies, creating their fate and mastering their lives *in every sense.*

You can shake off the shackles of old habits the association and influence of people around with limited minds, biassed opinions and outworn ideas. Therefore why buck against a stone wall? Why try to change clay into marble? Anyone can if one but knows the simple secret, takes one's present environment and makes it produce rich returns, for everything has its purpose when you learn the Cosmic plan, of the inner life.

A HAPPY MIDDLE AGE FOR ALL WOMEN

HELEN EDWARD, S.R.N.

In a woman's life, middle-age brings with it that important physiological event known as the menopause, the cessation of the menses or the "change of life," about which so much is spoken and so little actually known by the ordinary woman. Many women look forward with dread to this event, thinking they must suffer innumerable diseases "peculiar to women." This is a wrong and harmful attitude.

What is the menopause? It is a normal phase in the life of a woman. As at puberty, the menstrual and reproductive period begins, so at the menopause the organs of generation—uterus, ovaries, etc.—come to the end of their possible reproductive life, shrink, and finally cease to function. The process lasts from about six to twelve months, menstruation becoming irregular, profuse or scanty as the case may be, before it finally ceases. It is a perfectly natural proceeding. Many of the ill-effects ascribed to it are produced by fear and expectation. The change takes place generally between the ages of 45 and 50, sometimes earlier, sometimes later.

Healthy women experience little discomfort.—Women who have lived under natural, healthy conditions, eaten natural foods and enjoyed abundance of fresh air and exercise, often experience a late "change."

Before, during and after the menopause, various changes take place in the body. Many women suffer in a varying degree from headache, flushing, nose-bleeding, indigestion, depression, nervous irritability, pain and other uncomfortable conditions. As most of us live a more or less artificial life according to our circumstances, this doubtless accounts for the severity of some of the symptoms.

If a woman has been living a natural, healthy life, if she has allowed free movement of her body and limbs instead of restricting them with tight corsets, and if she follows the precepts of HEALTH FOR ALL, she is likely to experience little disturbance or discomfort at the menopause.

Mental adjustments have to be made as well as physical ones. When the *duties of motherhood* cease, other interests and activities become necessary. The nervous system, too, has gradually to be adjusted.

How, then, can those who are still young prepare for a happy and comfortable middle-age? This is where a knowledge of hygiene, diet reform, nature cure, and psychology are so useful.

How to make "The Change" easy.—All the organs of the body require to be kept healthy and in good working order. With all the demands of these strenuous times, how can this be done?

The brain, for instance, can be helped if you refrain from worry. *Nothing is so wearing* and so weakening of will as worry. Make up *your minds not to worry. After all,* our worries are often just over trifles or over things which are beyond our control. Mind training helps immensely. Whenever your mind dwells unduly on unpleasant things, switch thoughts on to something pleasant. It is possible, and the oftener it is done the easier it becomes. Live one day at a time and have faith in yourself. Isn't it worth remembering that "God always gives us strength to bear our troubles day by day; but He never calculated on our piling the troubles past and those to come, on top of those to-day."

The skin, whose functions are so important and essential, must be kept in good working tone. In the mornings a cold or tepid bath or cold sponge-down, followed by a good rub over with a rough towel, gives a feeling of glow and well-being and is excellent for the circulation.

At night a few minutes in a warm, not hot, bath and a good rub over is a great incentive to a resting brain and a night's sound sleep.

The period of readjustment.—The bowels must move *at least once a day without taking* aperients. Fruits, vegetables, wholewheat bread and, most important, habit, should *keep the bowels in good condition.*

During the period of readjustment to new *conditions*, including changes in the glands, special attention should be given to sleep, exercise, rest, food and drink. At least seven

hours' sleep should be secured each night. This should be easy if the above hints are taken.

Exercise is necessary. The woman who has always indulged in outdoor exercise should continue if she is not unduly tired. For those who live a sedentary life and have been unaccustomed to games, walking is the best and safest exercise. A brisk walk of an hour or two's duration should be taken regularly, regardless of the weather. Walk in the sunshine (on the sunny side of the road), if possible, and breathe deeply..

Rest is very important.—Adequate rest is essential. By this is not meant idleness, but rather a change of occupation. "Absence of occupation is not rest .." The woman who works in an office will find rest in a walk, while one who has been on her feet all day will find rest in a seat in the sunshine, or by the fireside, with a book or with needle-work. Real rest allows the tired parts to rest, while bringing into action other and less used parts of the organism.

Less food is needed at this time, for its chief function now is to repair waste. Meat is best avoided. Fruit, raw and cooked vegetables, wholewheat bread, milk, cheese, and eggs should mainly constitute the diet, which, of course, should be strictly on Diet Reform lines.

Water, fruit and vegetable juices are the best drinks. Tea and coffee, unless very weak, as well as alcohol, should be avoided. Milk is always a splendid *food*. It is especially useful for the thin and nervous. Smoking is inadvisable. and so addicts to the habit should cut it out or, at least, down as much as ever possible.

The psychological achievement. — The psychological aspect of middle age is important. More and more in these days are the marvellous effects of mind over matter stressed. Not so long ago, the change at middle life was looked upon as a loss of mental capacity for any new or creative work. The general acceptance of this idea tended to make women more and more settled in their habits, and lacking the power to change. The idea, however, that the brain deteriorated at middle age is not now believed. Memory may be at its best in youth and learning by rote and storing up knowledge easier, but by middle age two other important assets are added—reason and experience. Both these increase with the advance of time and so the mind should function better after than before middle age. Its growth and development may later bear much fruit

In her spare time, a woman may pursue an occupation or hobby that interests her, and when family cares grow less or she reaches the age limit in her profession, she can switch on to the interest in which she has trained herself.

If she possesses the spirit of adventure, she may start some thing quite new to her and will then enjoy all the zest and interest of new impressions. Thus the "change of life" will be a change in a real sense.

Variety is the zest of life; and an active, creative mind is the natural sequence to an active reproductive life. An active brain and fresh interests—helping in the wider life of the community—will provide many opportunities for useful and happy work, and steer a woman safely through the physical and psychological changes of middle age, to a graceful, happy and attractive autumn and winter of life.—*Health for All.*

Nicotine a Depressant

There is another important aspect of the alleged "lift" from cigarette smoking: Nicotine is a narcotic. All narcotics—morphine, cocaine, heroin, marijuana, ethyl alcohol—are depressants. They slow up and deaden nerve action. The dentist injects novocain when he wants to extract a tooth so that we feel no pain, for the novocain narcotizes the nerves of that tooth. Both alcohol and nicotine give the appearance of relieving fatigue for the moment because of their depressant and narcotic action upon the nerves. We are not less tired after we have had a cocktail or a smoke, but the nerves which normally register fatigue are dulled for the time being, therefore they cannot deliver their message to the brain.

It is obvious that tobacco can never replenish the reserves of muscular and nervous energy within the body, for only food does that. Not even the most unscrupulous tobacco is a food. It has no proteins, vitamins, minerals, fats, oils, starch, or sugar.

Upon a moment's reflection any smoker must come to the inescapable conclusion that there can be no energy-producing values in tobacco. Therefore its vaunted powers to "drive away that tired feeling" are wholly without foundation, though nicotine does play tricks on the human body. However, every smoker must pay, and pay dearly, for these lifts."—*Good Health.*

Topics from Medical and Health Periodicals

Morning Prayer

Two little eyes to look to God,
Two little ears to hear His word,
Two little lips to sing His praise,
Two little feet to walk His ways,
Two little hands to do His will,
And one little heart to love Him still.

—*The Treasure Chest.*

Relaxation or Recreation

MANY seek relaxation or recreation as a means of self-gratification and pleasure, and not for what it should be, a means of restoring and recreating the body. This class turn to activities that do not afford real relaxation or recreation, but, on the contrary, cause greater fatigue of body.

If we were all being what we were truly created to be, and getting "our happiness out of our work," there would be less need for vacation periods. By this we do not mean to imply that it is not best to take vacations, for it is true that we all need a change from time to time, but that change should be sought in something profitable The man who is doing physical work will find change and diversion in the reading and studying of good books and other wholesome literature. The man who is doing mental work should, according to the laws of nature, seek relaxation and recreation by physical exercise in the garden, by the study of flowers and birds in field and forest. All these things will call his attention to the Creator. Many to-day are allowing competition and the desire for selfish gain to deprive them of the joys of living, and to give them tense nerves instead.

—*The Oriental Watchman.*

Walking-a Complete Exercise

NEXT to swimming, walking is the most complete exercise the average individual has at his command. The opportunities for walking are always with us, while swimming facilities are denied most people most of the year Few people, comparatively, learn to swim, but all (save cripples and invalids) learn to walk.

To be a true health builder, walking should be done vigorously—not at a snail's pace, nor languidly, nor half-heartedly. Walk as if you are going somewhere, and really want to get there before sunset.

Posture is all important in walking. Get your shoulders back to give your lungs room for expansion. Keep your head high in order to straighten out your spine. Your chest should be out; your abdomen in. Breathe deeply; let the fresh air into the unused corners of your lungs.

A man's manner of walking is oft times an index to his psychology and character. If he is ambitionless, if he is discouraged, if he entertains a defeatist "what's-the-use" attitude toward life, it is plainly discernible in his walk.

If he is careless or unthinking about his health, his slump and slide will proclaim it.

If he is dyspeptic and acidulous, his gait and stance will reveal it.

If he is mean and low and small, he cannot hide it from those who see him coming down the street.

If, on the other hand, his conscience is clear, if his attitude toward his family and fellow men is one of helpfulness and uplift, if he is hopeful and optimistic, if his heart is surcharged with aspiration and his soul with inspiration, if his liver, his intestines, his kidneys, his stomach are all functioning 100%, then these things, too, will reveal themselves in his walk down main street —*Good Health.*

Food Value of Grass

A GREAT deal of discussion has taken place concerning the food value of grass for human beings. Unlike herbivorous animals, we are not provided with an extremely long appendix which houses special bacteria for the digestion of cellulose. All plant foods are made up of innumerable small cells which are walled off by cellulose. Since we cannot digest this substance, which is a carbohydrate, we cannot use grass as an energy-expressing food However, by mastication we can crush these cells and liberate the contents. It has been stated that man does possess some bacteria capable of digesting cellulose. The results obtained by people such as Mr J. R. Branson, who have lived largely on grass, suggests that digestion of the cellular contents may occur by the enzymes passing through the cellulose walls and the resulting products diffusing out again.

Grass in the young stage is very rich in body-building protein. Most noticeable of its properties, however, is its extremely high vitamin content. It probably has the highest mixed vitamin content of any plant. Taking an average value for other fruits and vegetables we find that grass has:

40	times the amount of vitamin A
10	,, ,, ,, ,, ,, B_1
25	,, ,, ,, ,, ,, B_2
14	,, ,, ,, ,, ,, C.

In addition, it is extremely rich in the other factors of the B complex, and in vitamin E. Indeed, the only vitamin of which it is not a good source is vitamin D.

The chief difficulty in the way of our eating grass is that, if eaten in quantity, the high

fibre content might have a strong laxative action. Nevertheless, it seems all wrong that such a valuable food element should be entirely neglected.—*Health for All.*

Dysentery Carried by Ants

DYSENTERY, one of the diseases of the tropics which present danger to fighting troops, may be carried by ants; at least experiments showed that these germs were actually carried on the feet of the ants, a 24-hour trail of germs being left wherever the ants walked.—*The Oriental Watchman.*

Influenza Spreads by Droplets

THE influenza virus, types A and B, is not spread from hand to hand, but by droplets containing the virus being sprayed into the air in the act of coughing, sneezing, or when talking loudly, announces Commander Albert Paul Krueger, Naval Laboratory Research Unit No. 1 at the University of California.

Pyorrhea Alveolaris

PYORRHEA (from pion-pus and roia-a flow) alveolaris is a loosening of teeth due to inflammation of their lining membrane, causing a flow of pus; it is also known as Riggs' disease, after J. M. Riggs, an American dentist. At the beginning the gums are swollen and bleed easily and are sensitive to touch during mastication and when brushing the teeth. These become loose and there is a continuous flow of pus, specially on applying pressure on the gums, and there is bad odour in the mouth, a condition known as halitosis. When the alveolar process, where the teeth are embedded, is attacked by the suppurative process, then the teeth fall off and there is great difficulty in mastication. Pus mixes with the food and is thus absorbed, or it may enter the circulation also through the blood vessels and lymphatics that surround the teeth. In this way it is carried to all parts of the body and may give rise to a host of affections and diseases, some of which are very serious, producing marked invalidity and even leading to death. These complications cannot be stopped unless the condition of the mouth is corrected, in some cases making it necessary the pulling out of some or all of the teeth. The damage done to the organs affected, in spite of these radical measures, is frequently permanent. When the heart is affected, for example, its reserve energy is permanently impaired.

Foremost among the complications of pyorrhea alveolaris is rheumatism, which, if allowed to become chronic, may involve the heart and impair it for life. Pyorrhea may be the cause also of digestive disturbances, nervous disorders, affections of the kidneys, etc; in fact it is always back in the mind of the doctor whenever he is confronted with a chronic ailment, specially when this is resistant to the ordinary therapeutic measures.

It is, therefore, of the utmost importance that pyorrhea alveolaris be properly treated and completely eradicated as soon as it is detected; it is even more important to prevent it by adopting certain measures and precautions. In the selection of foods for example, those rich in vitamin C, as tomatoes, oranges, limes, lemons, cabbages, carrots, atis, chico, cucumber, mango, etc., should be preferred; also hard foods, the mastication of which, afford the gums the necessary massage; it is good practice also to place a little tooth paste or powder on the finger and to rub it on the gums after brushing the teeth. These should be cleaned of food particles after each meal. The child should be taught to take good care of the teeth by the proper mouth hygiene. And lastly, no pathological condition of the mouth should be neglected; the dentist or the doctor should be consulted as soon as possible, before it can produce damage in other parts of the body; a safe practice is to see the dentist at least twice a year.—*Bulletin of the S. J. de Dios.*

Sacred Thoughts...

OF genious the only proof is, the act of doing well what is worthy to be done, and what was never done before. — WILLIAM WORDSWORTH.

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BE not overcome of evil, but overcome evil with good.—ROM. 12 : 21.

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BLESSED are the peacemakers: for they shall be called sons of God.—MATTHEW 5: 9.

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O GOD, thou knowest my foolishness;
And my sins are not hid from thee.
—Ps. 69 : 5.

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MAN is the spirit he worked in; not what he did, but what he became.—CARLYLE.

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THE wise man draws more advantage from his enemies than the fool from his friends. —FRANKLIN.

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IN doing what we ought we deserve no praise, because it is our duty.—AUGUSTINE.

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WHATEVER is worth doing at all, is worth doing well.—THE EARL OF CHESTERFIELD.

NINETY per cent. of the failures in this world could be divided into three great classes or brotherhoods. They would be the "If Brothers," the "Perhaps Brothers" and the "But Brothers."—*Bulletin of the S. J. de Dios.*